

# **Web-Based Data, Training, and Tools for Coastal Management**

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**Lynker Technologies on contract to NOAA Office for  
Coastal Management**

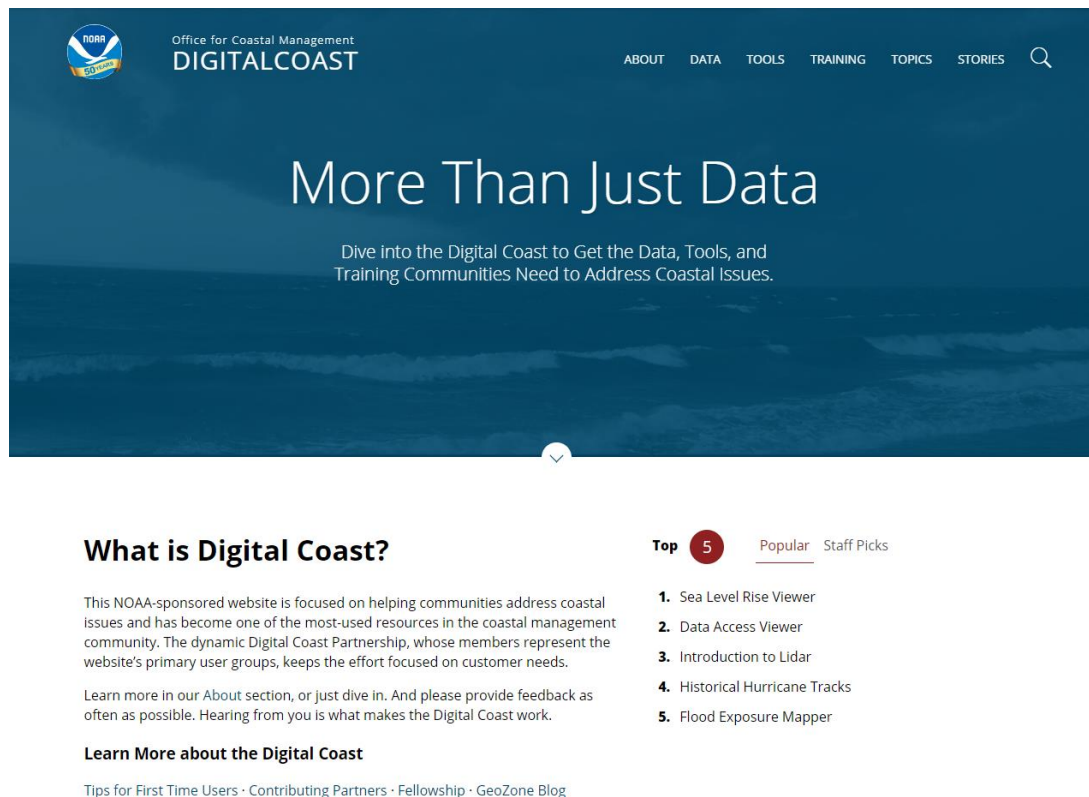


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# Agenda

Digital Coast: *coast.noaa.gov/digitalcoast*

- Data
- Tools
- Training
- Stories
- Topics



The screenshot shows the NOAA Digital Coast website. The header includes the NOAA logo, the text "Office for Coastal Management DIGITALCOAST", and navigation links: ABOUT, DATA, TOOLS, TRAINING, TOPICS, STORIES, and a search icon. The main heading is "More Than Just Data" with the subtext "Dive into the Digital Coast to Get the Data, Tools, and Training Communities Need to Address Coastal Issues." Below this is a section titled "What is Digital Coast?" which describes the website's purpose and provides a link to learn more. To the right of this section is a list of popular resources, including "Sea Level Rise Viewer", "Data Access Viewer", "Introduction to Lidar", "Historical Hurricane Tracks", and "Flood Exposure Mapper".

**What is Digital Coast?**

This NOAA-sponsored website is focused on helping communities address coastal issues and has become one of the most-used resources in the coastal management community. The dynamic Digital Coast Partnership, whose members represent the website's primary user groups, keeps the effort focused on customer needs.

Learn more in our About section, or just dive in. And please provide feedback as often as possible. Hearing from you is what makes the Digital Coast work.

**Learn More about the Digital Coast**

[Tips for First Time Users](#) · [Contributing Partners](#) · [Fellowship](#) · [GeoZone Blog](#)

**Top 5 Popular Staff Picks**

1. Sea Level Rise Viewer
2. Data Access Viewer
3. Introduction to Lidar
4. Historical Hurricane Tracks
5. Flood Exposure Mapper



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# Digital Coast: Data

- Elevations and depths (LiDAR, IfSAR, etc.)
- Coastal Land Cover
- Publicly available satellite and aerial imagery
- Historical Aerial Imagery



# Data: Depths and Elevations

The screenshot displays the NOAA Data Access Viewer interface, specifically the ELEVATION tab. The top navigation bar includes the NOAA logo, the text "DATA ACCESS VIEWER", and tabs for "IMAGERY", "LAND COVER", and "ELEVATION". On the right, there are links for "HELP" and "SHARE", and a shopping cart icon. Below the navigation bar, a search bar prompts the user to "Search By Address, Lat/Lon or" with a "Draw" button and a close button. The main map area shows a topographic map of Guam with a yellow rectangular selection box. To the right of the map, there is a list of data products with filters and sorting options. The products listed are:

- 2012-2013 USGS Lidar: Territory of Guam** by USGS, containing 1,184,187,687 points, with a "BULK DOWNLOAD" link and a shopping cart icon.
- 2007 USACE NCMP Topobathy Lidar: Pacific Islands (Guam)** by USACE, containing 607,751,743 points, with a "BULK DOWNLOAD" link and a shopping cart icon.
- NOAA Sea Level Rise Viewer DEM** by NOAA, 576.00 MB in size, with a "BULK DOWNLOAD" link and a shopping cart icon.

*Note: NOAA is currently updating the depths and elevations for the Mariana Islands, with new topobathymetric LiDAR slated for release on Digital Coast by the end of 2020.*

# Data: Land Cover (C-CAP)

- High-resolution land cover map
- Available for select areas including Hawaii, Pacific territories, and the Caribbean
- Updated every five years  
*note: Guam, CNMI and Hawaii are currently undergoing a 2020 update*
- Mapping classes include forest, wetlands, and various natural and man-made features



# Data: Coastal Land Cover (C-CAP)



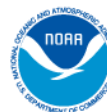
2005 Land Cover



2005 to 2011 Change



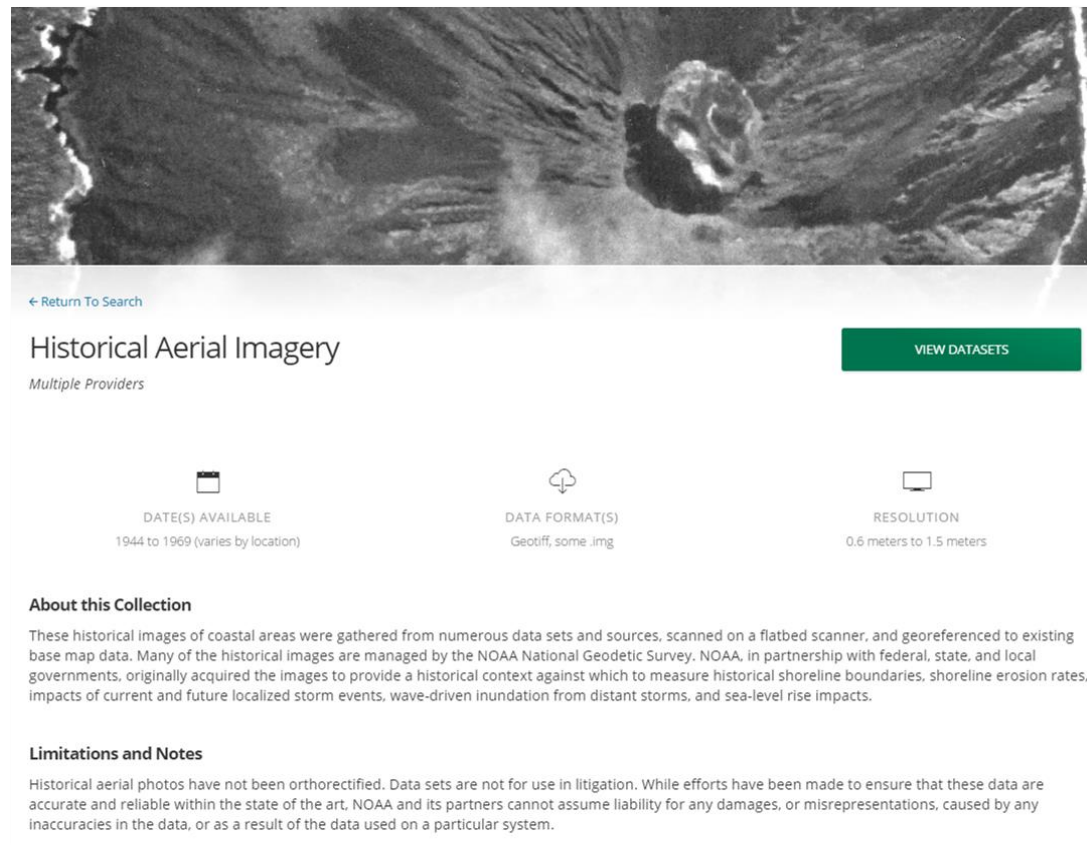
2011 Land Cover





# Data: Historical Aerial Imagery

Gathers images from numerous data sets and sources, scans them, and georeferences to existing base map data



The image shows a screenshot of a web application for historical aerial imagery. At the top is a large, grainy black and white aerial photograph of a coastal area with a prominent circular feature. Below the image is a navigation bar with a link "Return To Search". The main heading is "Historical Aerial Imagery" with the subtitle "Multiple Providers". To the right is a green button labeled "VIEW DATASETS". Below this are three informational cards: "DATE(S) AVAILABLE" (1944 to 1969), "DATA FORMAT(S)" (Geotiff, some .img), and "RESOLUTION" (0.6 meters to 1.5 meters). Further down is an "About this Collection" section with a paragraph of text, followed by a "Limitations and Notes" section with another paragraph of text.

← Return To Search

## Historical Aerial Imagery

Multiple Providers

[VIEW DATASETS](#)

**DATE(S) AVAILABLE**  
1944 to 1969 (varies by location)

**DATA FORMAT(S)**  
Geotiff, some .img

**RESOLUTION**  
0.6 meters to 1.5 meters

**About this Collection**

These historical images of coastal areas were gathered from numerous data sets and sources, scanned on a flatbed scanner, and georeferenced to existing base map data. Many of the historical images are managed by the NOAA National Geodetic Survey. NOAA, in partnership with federal, state, and local governments, originally acquired the images to provide a historical context against which to measure historical shoreline boundaries, shoreline erosion rates, impacts of current and future localized storm events, wave-driven inundation from distant storms, and sea-level rise impacts.

**Limitations and Notes**

Historical aerial photos have not been orthorectified. Data sets are not for use in litigation. While efforts have been made to ensure that these data are accurate and reliable within the state of the art, NOAA and its partners cannot assume liability for any damages, or misrepresentations, caused by any inaccuracies in the data, or as a result of the data used on a particular system.

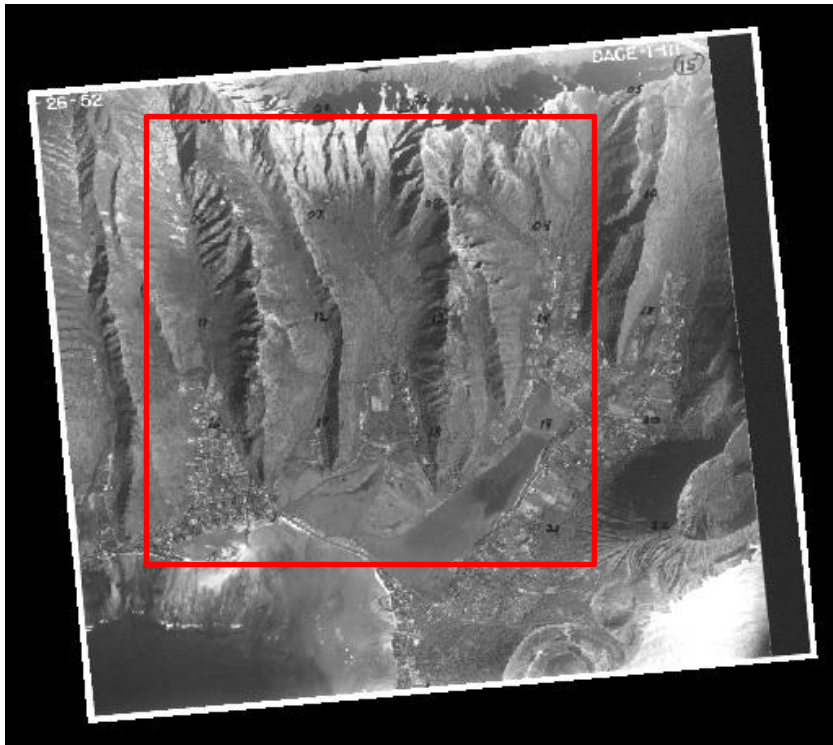
Available : American Samoa (1961), CNMI (1945-1949, 1969),  
Guam (1953, 1964, 1967) & Hawaii (1954, 1965)



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# Data: Historical Aerial Imagery

## Koko Bay, Oahu, Hawaii



1954



1965



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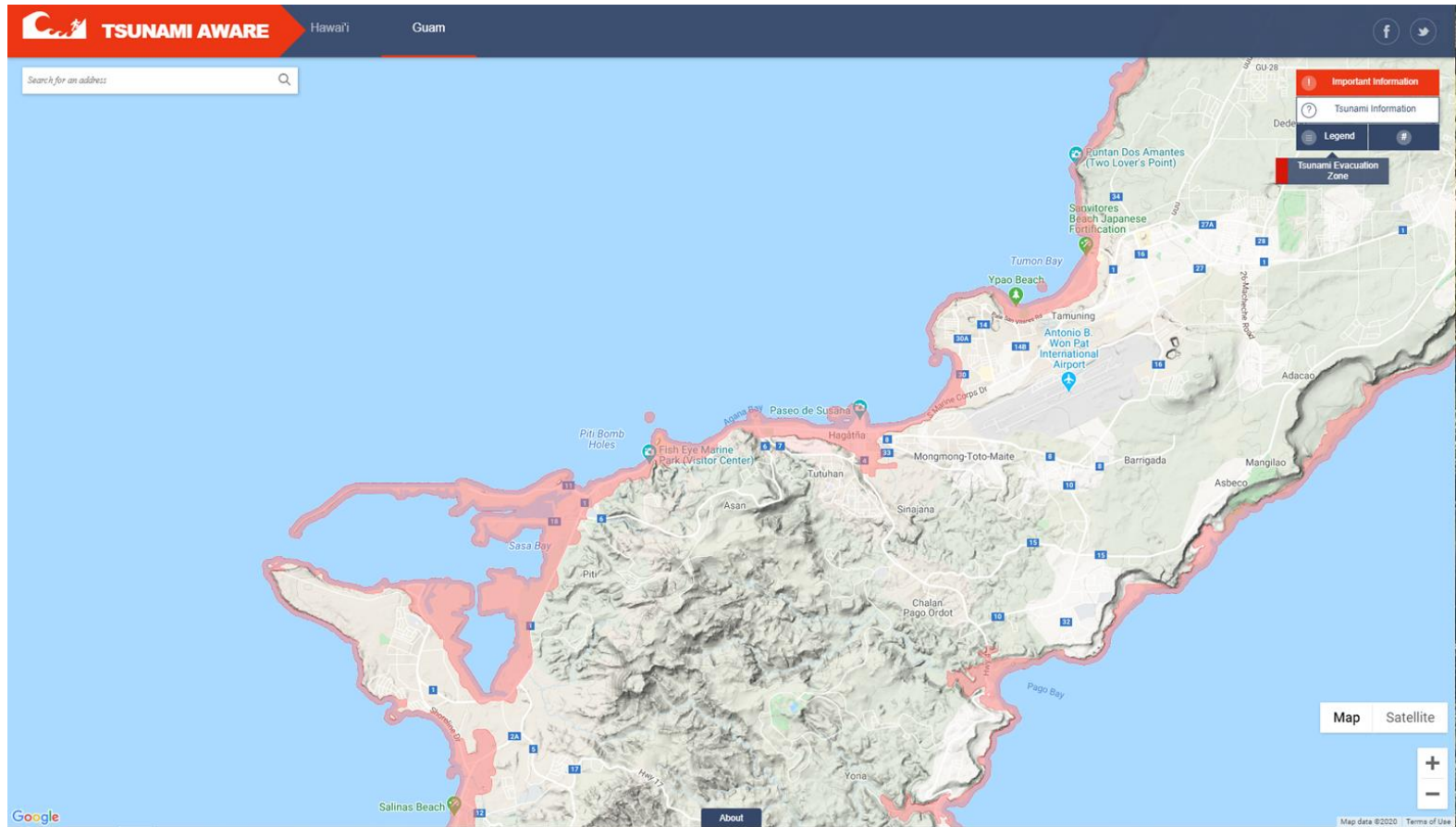
# Digital Coast: Tools

- Tsunami Information Service
- Land Cover Atlas
- Hurricane Tracker
- Sea Level Rise Viewer
- OpenNSPECT



# Tools: Tsunami Information Service

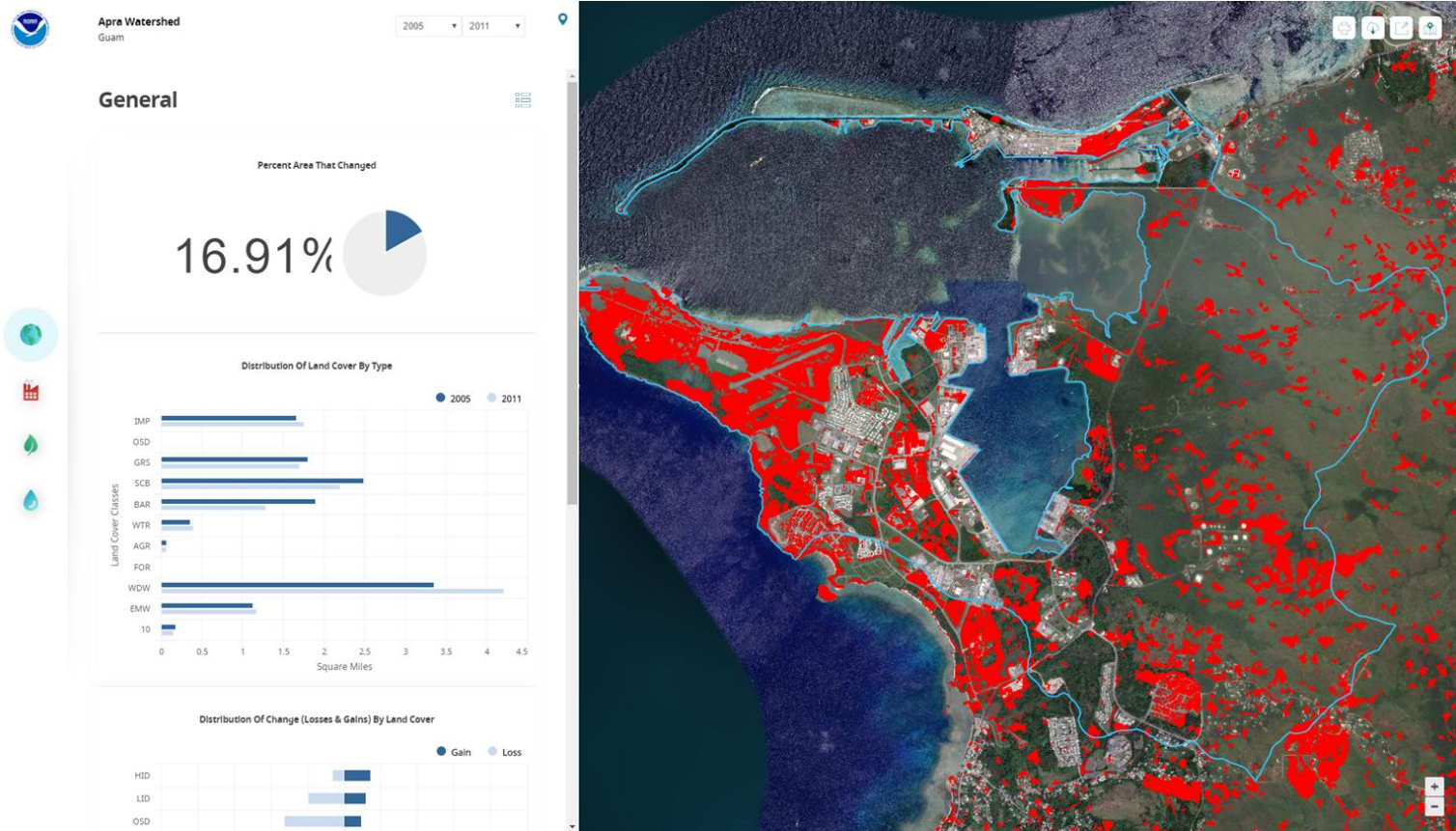
Provides interactive tsunami evacuation maps and information for Hawaii and Guam



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# Tools: C-CAP Land Cover Atlas

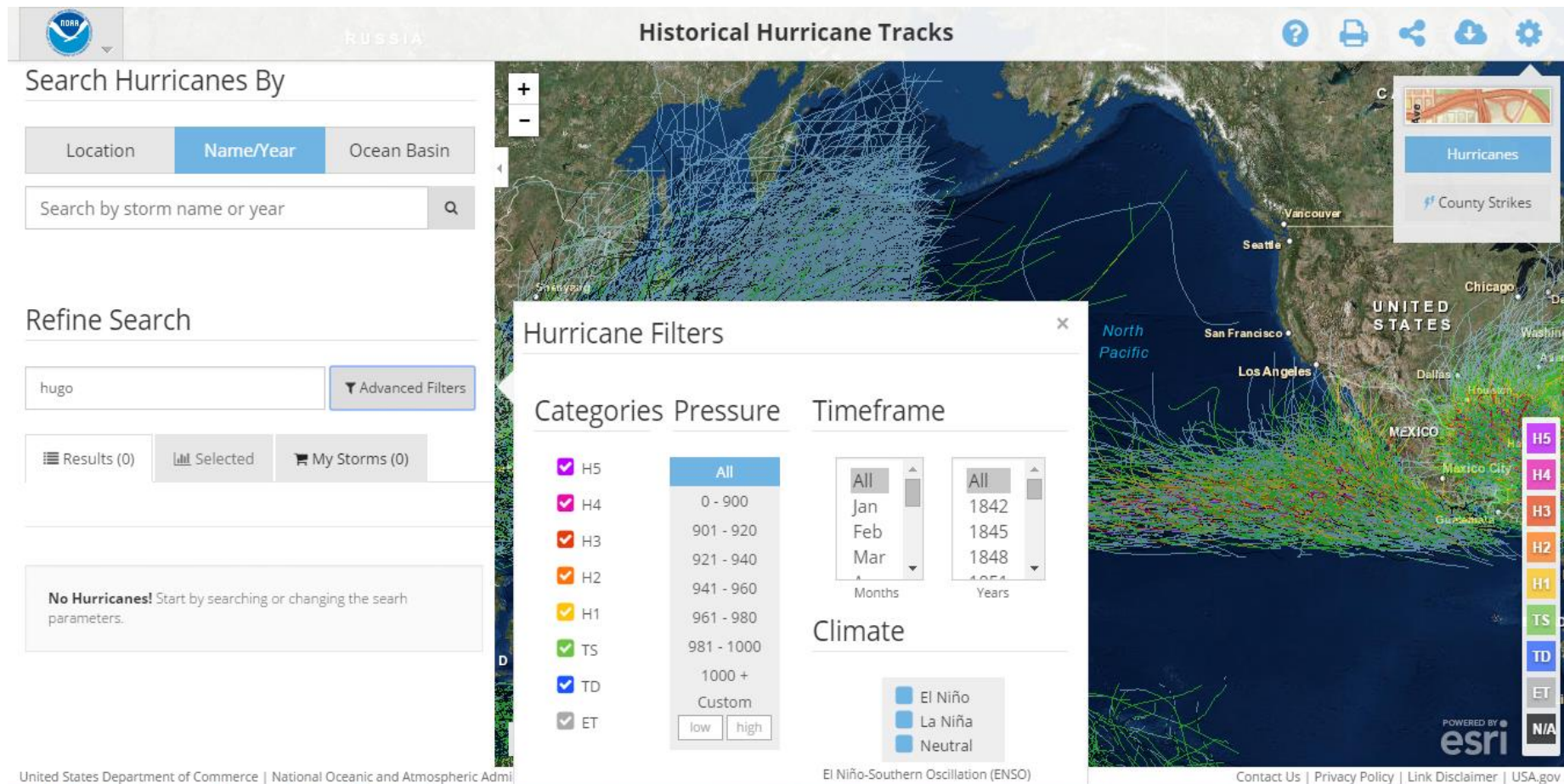
Summarizes change trends and provides tables, maps, and reports to enhance communication and decision-making





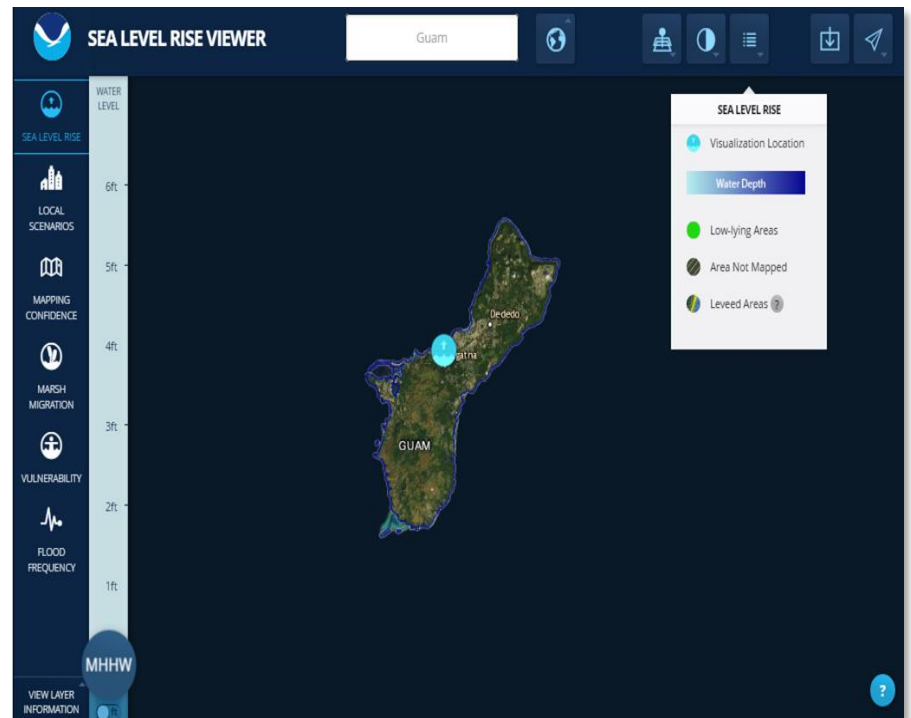
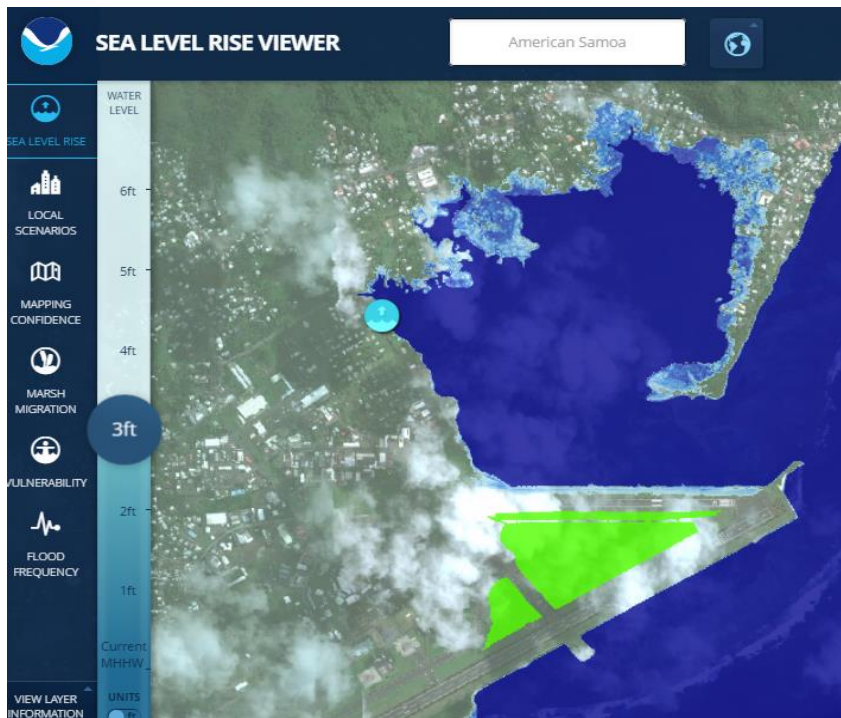
# Tools: Hurricane Tracker

Analyzes historical tropical cyclone data



# Tools: Sea Level Rise Viewer

Displays potential sea level rise, coastal flooding impact areas, and relative depth



Online data viewer, it simulate various sea level rise scenarios (from one to six feet above the average highest tides) and the corresponding areas that would be impacted by flooding



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# Digital Coast: Training



## Scheduled Training



### Classroom, Instructor-Led

Bring these courses and our instructors to your location.



### Online, Instructor-Led

Learn at your desk, or a coffee shop, with sessions taught in real time by our instructors.

## Additional Resources

You may also be interested in additional training resources from our Digital Coast and Contributing Partners.

[Additional training resources](#)

## On-Demand Products



### Self-Guided Resources

Develop and practice new skills on your own time with interactive guides and structured courses.



### Case Studies

Learn from these peer-to-peer case studies how other coastal practitioners have tackled thorny issues.



### Publications

Explore the digital library of topical publications and studies.



### Quick References

Access helpful worksheets, checklists, and tip sheets.



### Videos And Webinars

View short videos that make difficult topics easier to understand. View recorded webinars to learn from experts in the field.



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# Digital Coast: Training



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ABOUT DATA TOOLS TRAINING TOPICS STORIES

Displaying 171 trainings sorted by **A > Z** ▼

## Browse Course Calendar

### Focus Area

- Climate Adaptation
- Coastal Conservation
- Coastal Economy
- Coastal Hazards
- Community Resilience
- Green Infrastructure
- Land Use Planning
- Ocean Planning
- Water Quality

### Skills Desired

- Program and Project Planning
- Community Engagement
- GIS and Mapping
- Social Science Methods

### Training Type

- Classroom, Instructor-Led
- Online, Instructor-Led
- Self-Guided Resources
- Case Studies
- Quick References
- Publications
- Videos and Webinars

## A Community Resource Guide for Planning Living Shorelines Projects

Provides communities with key information and resources for moving forward with living shoreline projects in New Jersey



Publications

## A Framework for Developing Monitoring Plans for Coastal Wetland Restoration and Li...

Guides users in selecting monitoring metrics, collecting data, and developing a monitoring plan for coastal wetland restoration and living shoreline projects



Publications

## A Guide for Incorporating Ecosystem Service Valuation into Coastal Restoration Pro...

Outlines a process for measuring socioeconomic benefits of salt marshes, living shorelines, and oyster reefs



Publications

## A Community Works Together to Restore the Floodplain and Reduce Damages

See how community leaders are engaging stakeholders and residents to reduce riverine flooding by reclaiming the floodplain



Case Studies

## A Framework for Ecosystem Services Projects

Provides participants with the knowledge and tools necessary to apply the ecosystem services framework to project planning (1-day course)



Classroom, Instructor-Led

## A Guide for Planning for Meaningful Evaluation

Outlines a process for planning evaluations that can improve any project or program



Publications

## A Community-Based Social Marketing Approach to Promoting Safe Growth in Coastal Co...

Includes themes and key messages to help planners convey to communities the value of incorporating hazard mitigation in their comprehensive plans



Publications

## A Framework for Ecosystem Services Projects Worksheet

Allows a closer examination into the questions provided in the companion quick reference checklist for considering ecosystem services in project planning



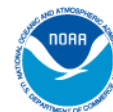
Quick References

## A Guide to Assessing Green Infrastructure Costs and Benefits for Flood Reduction

Outlines six steps to help communities determine costs of flooding and green infrastructure approaches



Publications



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# Digital Coast: Stories





[Home](#) | [Stories From The Field](#)


Displaying 121 Stories


[VIEW FILTERS](#)

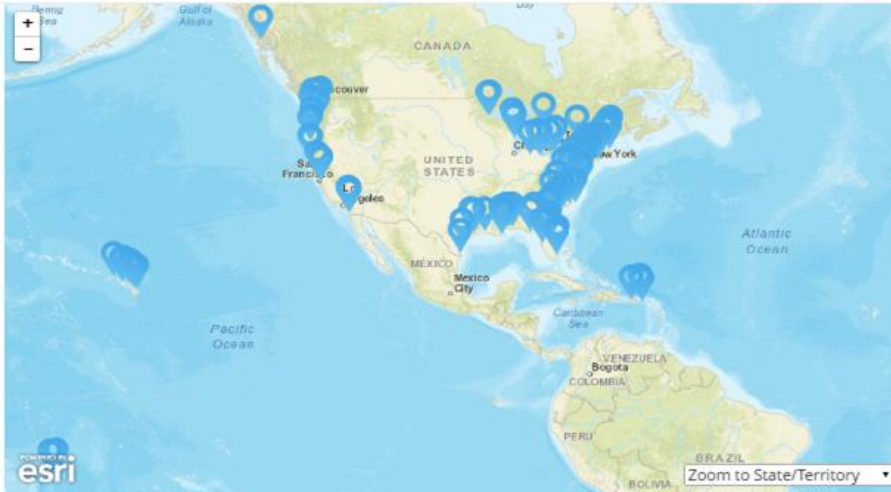
**Adapting to Sea Level Rise in Miami-Dade County, Florida**

**Advancing Restoration in the Great Lakes Region**

**Analyzing Sedimentation Processes to Guide Conservation in Oregon**

**Analyzing the Impacts of Hurricane Katrina on Forest Ecosystem Services**

**Applying Green Infrastructure to Stem Runoff and Safeguard Puerto Rico's...**



esri

Zoom to State/Territory



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# Digital Coast: Topics

Groups Digital Coast resources under a single topic. These topics will summarize case studies, data, and tools needed to tackle a pressing coastal management issue.

## TOPICS


Gain easy access to the Digital Coast resources most often associated with these topics.

[Home](#) | [Topics](#)




### Adaptation Strategies

Coastal communities are striving to find new ways to protect the built and natural environment from powerful storms and frequent flooding. Provided are examples o...




### Coastal and Ocean Economy

Coastal and ocean resources are productive drivers for the nation's economy. NOAA's Digital Coast provides the tools and data sets used to quantify these impacts;...




### Coastal Land Cover

Land cover maps document how much of an area is covered by natural and man-made features, such as development, wetlands, and forests. In addition to data, NOAA's ...




### Coastal Storms

Coastal storms can bring flooding, storm surge, and the potential for severe damage. Communities that prepare in advance are more resilient. These Digital Coast r...




### Ecosystem Services

Nature provides many community benefits. Understanding how changes to the landscape may affect these benefits is important. This list represents some of the Digit...




### Natural Infrastructure

Nature (and man-made systems that mimic natural processes) provides effective solutions for minimizing coastal flooding, erosion, and runoff. Provided is a sampli...




### Ocean Planning

The ocean is a busy place. A sample of the Digital Coast resources related to ocean planning is provided here.




### Risk Communication

Coastal officials want to help communities help themselves when faced with storms and other hazardous events. These products represent a sample of the Digital Co...



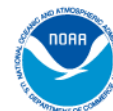
### Vulnerability Assessments

A good understanding of the people and places in harm's way is an important first step for communities looking to address potential impacts from coastal flooding...



### Water Quality

Good water quality is essential for human and environmental health. Here's a sample of the resources available on NOAA's Digital Coast that help address this topic.



# Questions?

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